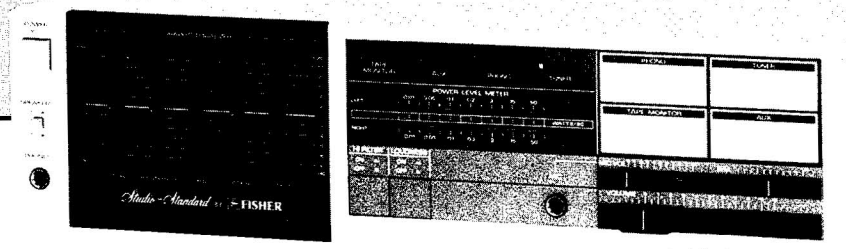
SERVICE MANUAL

FISHER®

CA-77

Integrated Stereo Amplifier



The first name in high fidelity

U.S.

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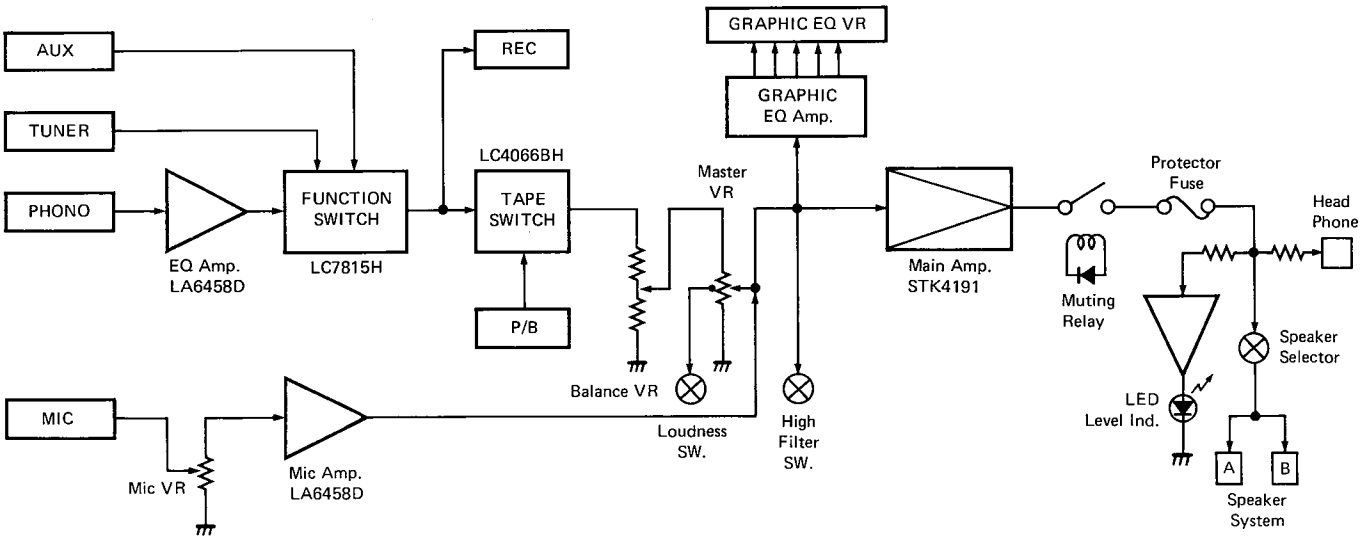
FUNCTIONAL BLOCK DIAGRAM



SPECIFICATIONS

AMPLIFIER		CA-77
POWER AMPLIFIER SECTION		
Minimum RMS sine wave power per channel within stated bandwidth at no more than stated distortion and with 8-ohm load		50 Watts
Power Bandwidth		20 Hz – 20 kHz
Total Harmonic Distortion		0.2 %
I.M. Distortion		0.2 %
Speaker Damping		>20
PREAMPLIFIER SECTION		
Frequency Response		
	Phono (RIAA)	±0.5 dB
	Aux (20 Hz – 20 kHz)	±0.5 dB
	Microphone (150 – 5 kHz)	±3 dB
Input Sensitivity and Impedance		
	Phono	2.5 mV/50 kΩ
	Tape Monitor	230 mV/50 kΩ
	Tuner/Auxiliary	150 mV/50 kΩ
	Microphone	2 mV/2 kΩ
Phono Max. Input Capability		
	Phono	170 mV
Graphic Equalizer		
	50 Hz	±10 dB
	250 Hz	±10 dB
	1 kHz	±10 dB
	4.5 kHz	±10 dB
	15 kHz	±10 dB
High Filter (Above 10 kHz)		6 dB/Oct.
Loudness Contour (100 Hz/10 kHz)		+8 dB/+4 dB
Hum and Noise (IHF Short Circuit, A Network)		
	Phono	70 dB
	Tape Monitor	90 dB
	Tuner/Auxiliary	90 dB
	Microphone	60 dB
GENERAL		
Power Requirements		120 V AC ±10 %
(50/60 Hz)		230 W
AC Outlets		3
Dimensions (W x H x D)		15-3/4" x 4-1/8" x 10"
Weight (approx.)		12.8 lbs.

* Because its products are subject to continuous improvement, Fisher Corporation reserves the right to modify product designs and specifications without notice and without incurring any obligation.

DISASSEMBLY INSTRUCTIONS

A. REMOVAL OF FRONT PANEL

1. Detach Cover by removing four screws.

2. Pull out GRAPHIC EQUALIZER Volume Knobs (A). (Fig. 1)

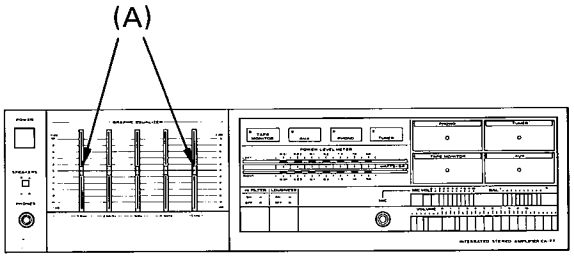


Fig. 1

3. Remove four screws (B) fastening Front Panel. (Fig. 2)

4. Remove three Connectors (C).

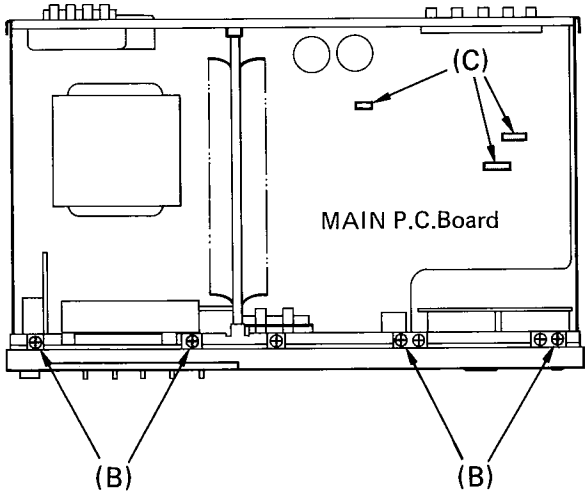


Fig. 2

5. Remove three screws (D) fastening Front Panel and then pull Front Panel toward you. (Fig. 3)

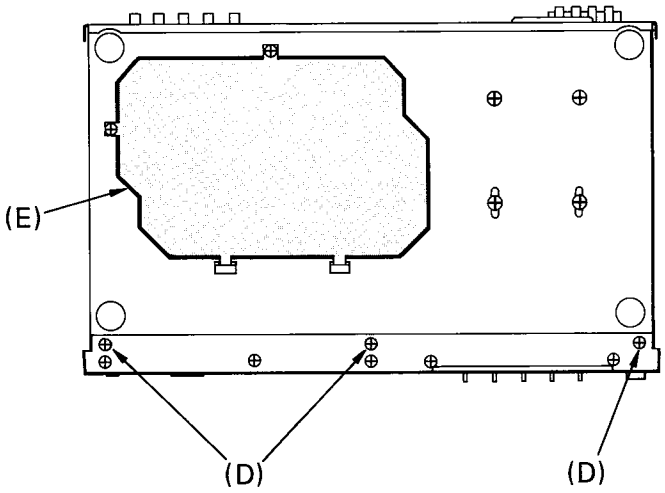


Fig.

(Repeat the reverse procedure to reassemble Front Panel.)

B. REPAIR AND ADJUSTMENT OF PRINTE CIRCUIT BOARD

1. The removal of Cabinet Bottom Plate (E) will give an acce to the repair or adjustment work of Main Printed Circu Board.

RECOMMENDED TEST EQUIPMENTS

The following test equipments are recommended to completely test and align the Amplifier:

- Line Voltage Isolation Transformer
- AC DC Multimeter.
- Accurately Calibrated AC Voltmeter.
- Oscilloscope (Flat to 100 kHz Minimum)
- Low-Distortion Audio Sine-Wave Generator
- Harmonic Distortion Analyzer
- Two (2) Load Resistors 8-ohms, 250 Watts (Minimum Rating)

HARMONIC DISTORTION TEST

CAUTION: Limit the following tests to no more than ten minutes each. Use 8-ohm resistors, with a minimum power rating of 250 watts when connecting a load across the SPEAKERS terminal.

CONTROL SETTINGS:

Unplug the AC power cord and set the front panel controls as follows:

- GRAPHIC EQUALIZER and BALANCE controls to center positions.
- POWER switch to OFF
- SPEAKERS switch to SYSTEM-B
- FUNCTION switch to AUX
- TAPE MONITOR switch to SOURCE
- LOUDNESS switch to OFF
- HI FILTER switch to OFF
- VOLUME control to MINIMUM position
- LEFT CHANNEL DRIVEN

ONE CHANNEL DRIVEN:

1) Connect a low distortion audio generator to LEFT AUX IN jack. Set generator frequency to 1 kHz and output to minimum.

2) Connect an 8-ohm load resistor between SPEAKERS SYSTEM-A LEFT and COM terminals. Connect a Harmonic Distortion Analyzer and an AC VTVM in parallel across the 8-ohm load.

3) Connect the AC power cord and set SPEAKERS switch to SYSTEM-A. Turn VOLUME control to MAX.

4) Increase generator output for 50 Watts RMS (20.0 V across the 8-ohm load). Harmonic Distortion Analyzer should measure 0.2 % distortion or less.

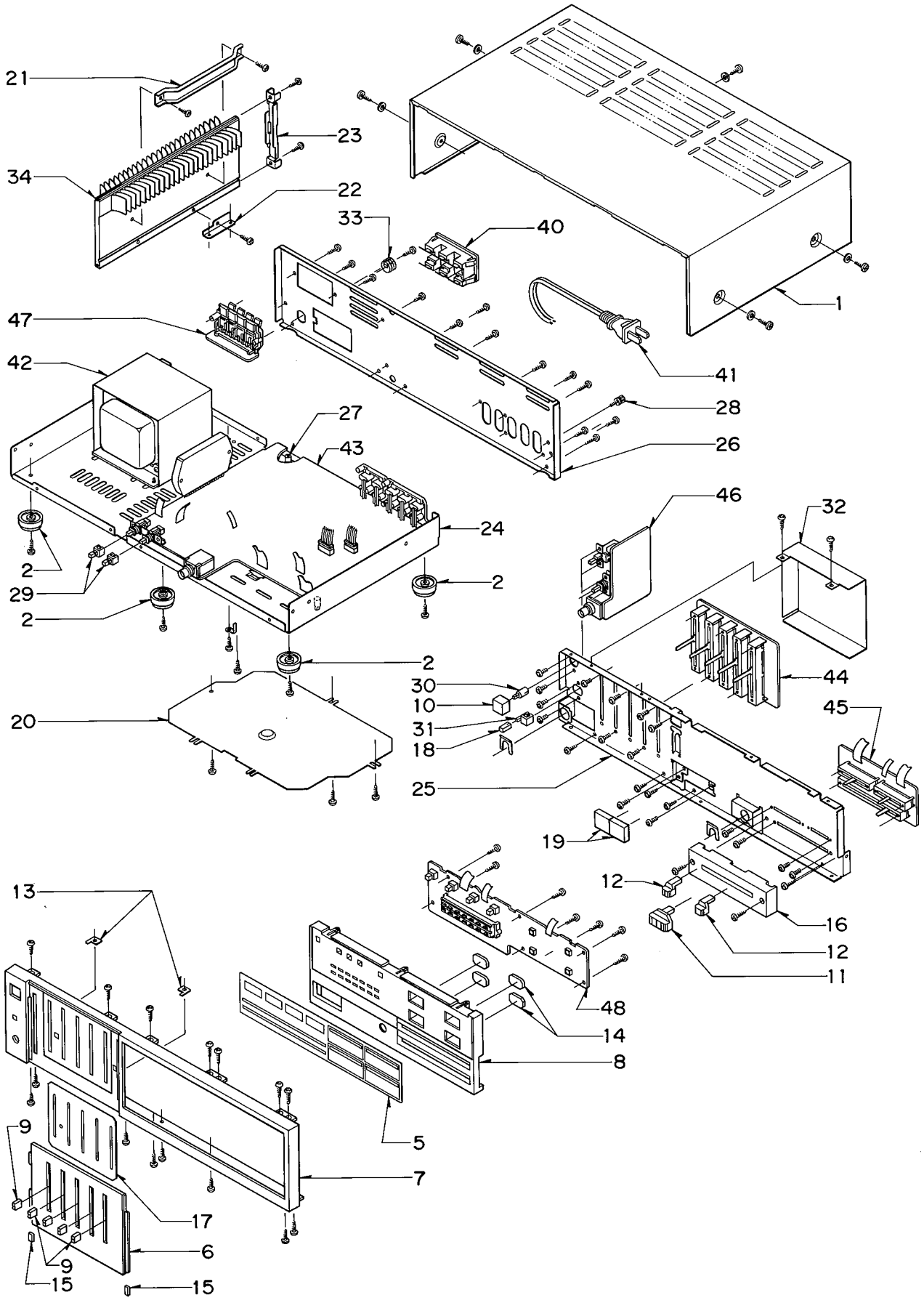
5) Repeat steps 1 through 4 for RIGHT CHANNEL.

BOTH CHANNELS DRIVEN

Connect 8-ohm load resistors across LEFT and RIGHT SPEAKERS SYSTEM-A terminals. Adjust generator output and "BALANCE" control for 50 Watts at Left and Right Channels (20.0 volts across the 8-ohm loads). Harmonic Distortion Analyzer should measure 0.2 % distortion or less at each channel.

CAUTION: This precision high-fidelity instrument should be serviced only by qualified personnel, trained in the repair of transistor equipment and printed circuitry.

EXPLODED VIEW OF CABINET AND CHASSIS



PARTS LIST

ACKING PARTS LIST

ef. No.	Parts Number	Description
	131 6 1169 07000	Box Corrugate-EXP
	131 6 2119 02131	Bag Polyethylene-EXP
	131 6 3009 33930	Pad (Left)
	131 6 3009 33940	Pad (Right)
	131 6 3069 16350	Patching Sheet

CCESSORIES PARTS LIST

ef. No.	Parts Number	Description
	131 6 4169 03100	Explanatory Booklet
	131 6 4319 10802	Service Station List
	131 6 4519 14400	Guarantee Card
	131 6 4939 00200	Information Card

ABINET PARTS LIST

ef. No.	Parts Number	Description
1	131 2 1410 28900	Cover
2	131 2 1801 12900	Leg

PPEARANCE PARTS LIST

ef. No.	Parts Number	Description
5	131 2 1203 57500	Panel Control
6	131 2 1203 57600	Panel Control
7	131 2 1203 57700	Panel Control
8	131 2 1207 13000	Housing (Touch SW.)
9	131 2 1601 71001	Knob (Tone EQ)
0	131 2 1601 83700	Knob (Power Switch)
1	131 2 1601 85500	Knob (Master Volume)
2	131 2 1601 85600	Knob (Mic Mix, Balance)
3	131 2 3101 87700	Metal Mount
4	131 2 4208 41200	Spacer (Touch SW.)
5	131 2 5205 28500	Cushion
6	131 2 6113 48000	Shelter
7	131 2 6113 48700	Shelter (EQ)
8	141 2 1659 08000	Knob (Speaker Switch)
9	141 2 1659 08100	Knob (Push Switch)

CHASSIS PARTS LIST

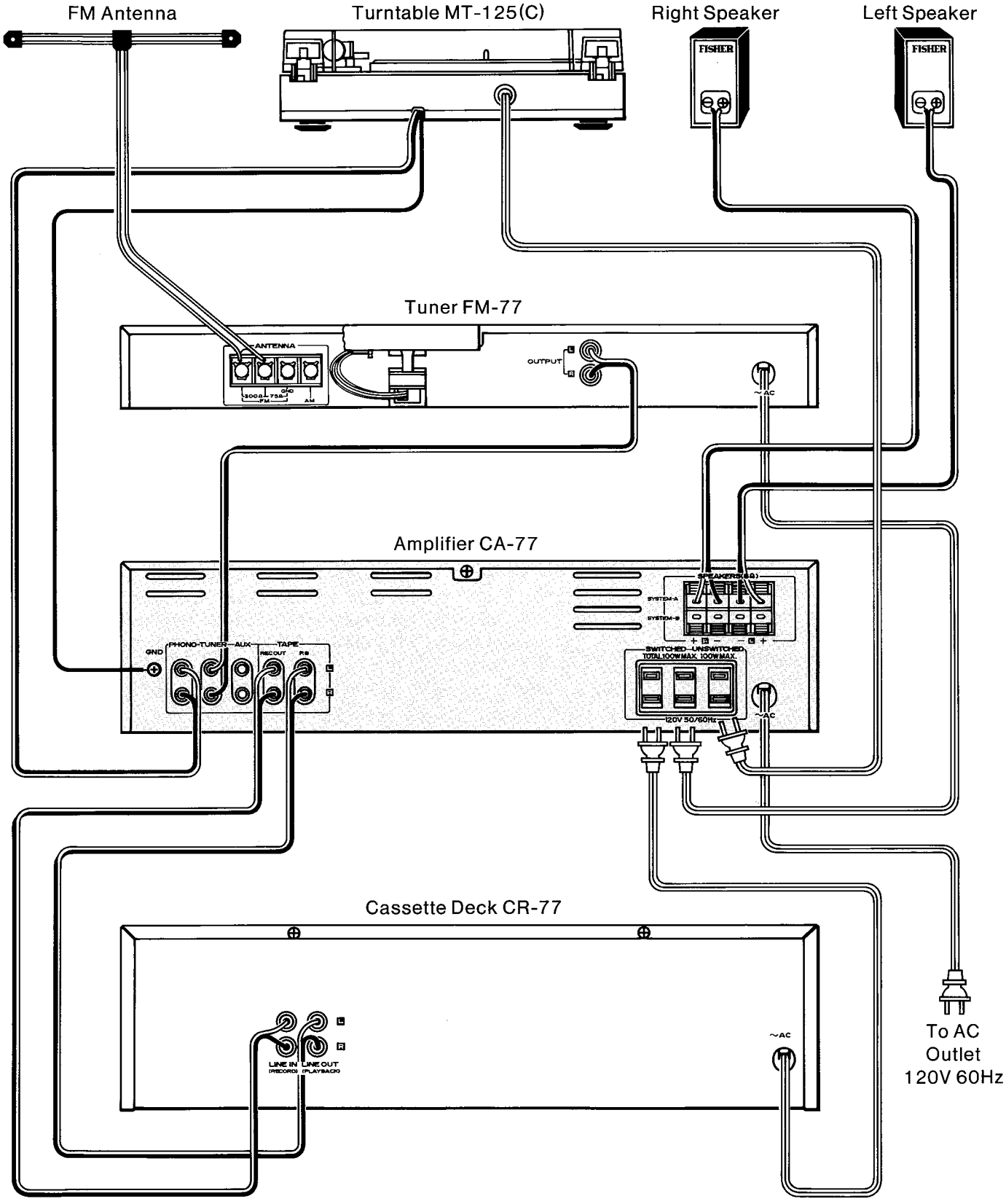
Ref. No.		Parts Number	Description
20		131 2 1410 28800	Cover (Bottom)
21	*	131 2 3101 71300	Metal Mount (IC)
22	*	131 2 3101 87800	Metal Mount
23	*	131 2 3101 87900	Metal Mount (Heat Sink)
24	*	131 2 3301 29800	Chassis
25	*	131 2 3305 34000	Panel Front
26	*	131 2 3306 36800	Panel Rear
27	*	131 2 3614 20300	Mount P.C.B.
28		131 2 4201 17800	Screw (GND)
29		131 2 4219 16200	Shaft (Push Switch)
30		131 2 4219 17100	Shaft (Power Switch)
31		131 2 4219 17400	Shaft (Speaker Switch)
32		131 2 6103 23200	Cover Shield
33		131 2 6111 14200	Bushing (Line Cord)
34		131 2 6201 32000	Heat Sink

ELECTRICAL PARTS LIST

Ref. No.	Parts Number	Description
40	4 2359 23421	AC Socket
41	4 2432 00340	Line Cord
42	4 2512 19100	Power Transformer
43	131 0 4001 11440	Main P.C.B. Assy
44	131 0 4001 11450	Graphic EQ P.C.B. Assy
45	131 0 4001 11460	Volume P.C.B. Assy
46	131 0 4001 11470	Power SW. P.C.B. Assy
47	131 0 4001 11480	Speaker Terminal P.C.B. Assy
48	131 0 4001 11490	L.E.D., Function SW. P.C.B. Assy

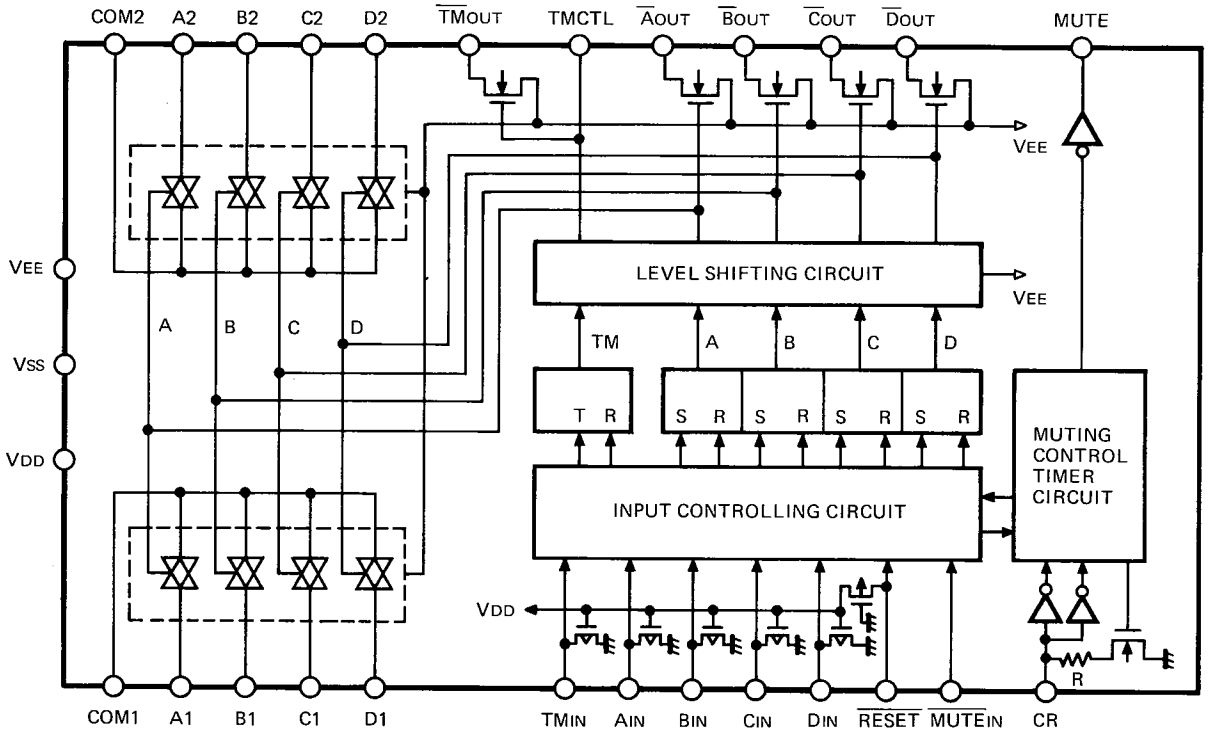
*—Not a service part.

SYSTEM 7700 CONNECTING DIAGRAM

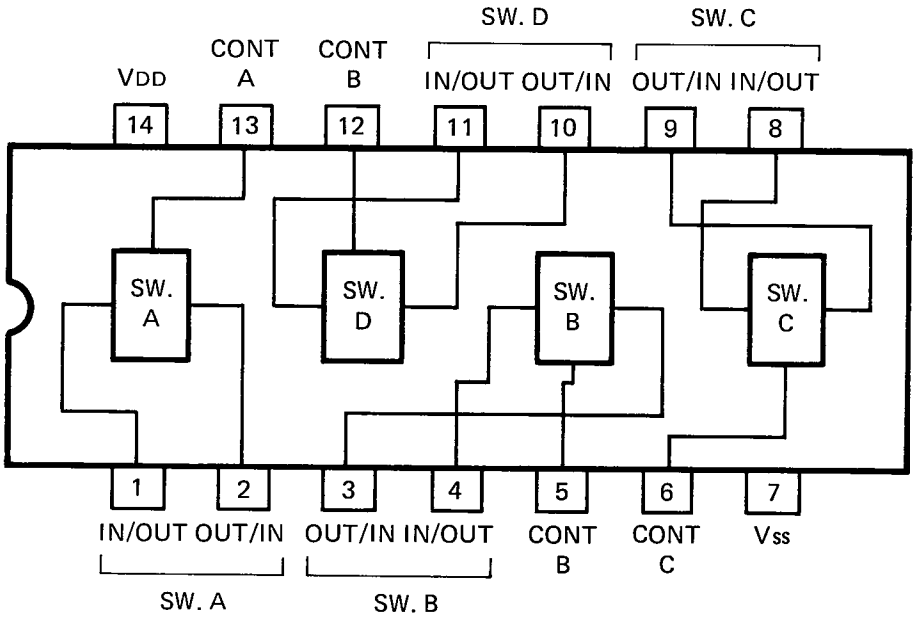


IC EQUIVALENT CIRCUIT & BLOCK DIAGRAM

UNCTION ANALOG SWITCH IC LC7815

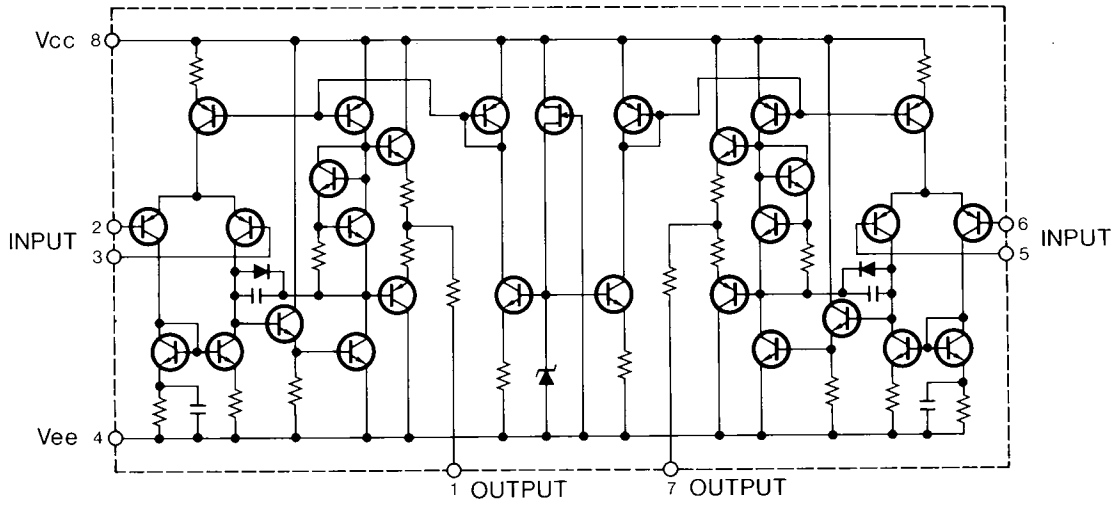


APE INPUT ANALOG SWITCH IC LC4066B

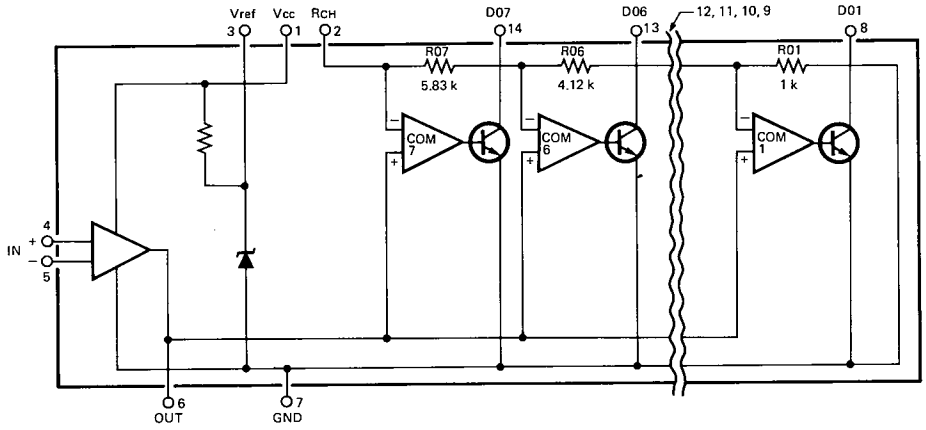


IC EQUIVALENT CIRCUIT & BLOCK DIAGRAM (Continued)

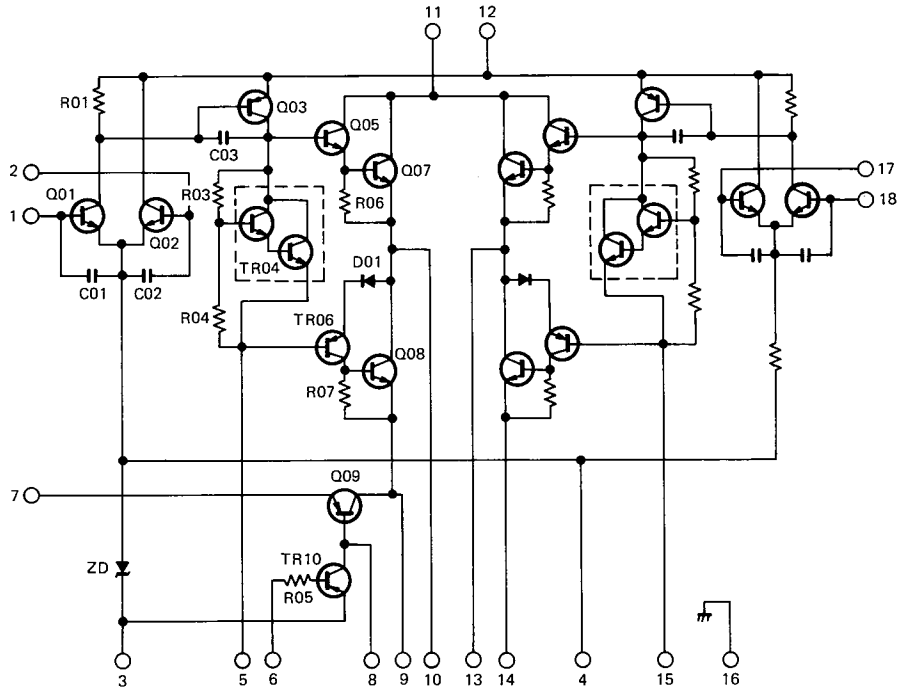
PHONO/MIC/EQ AMP IC LA6458D



L.E.D. LEVEL METER IC LB1407

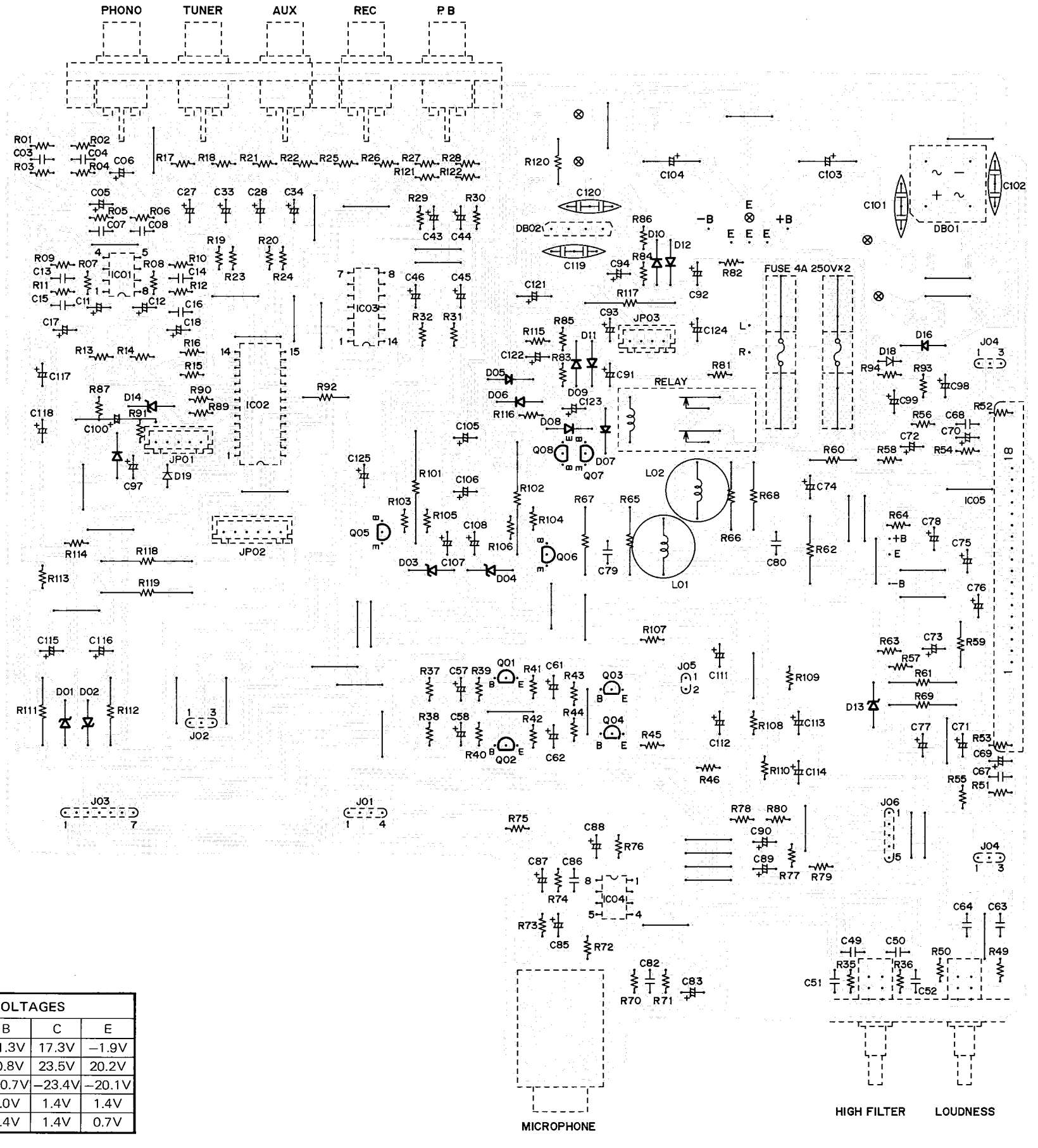


POWER AMP IC STK4191



MAIN PRINTED CIRCUIT BOARD

(BOTTOM VIEW)



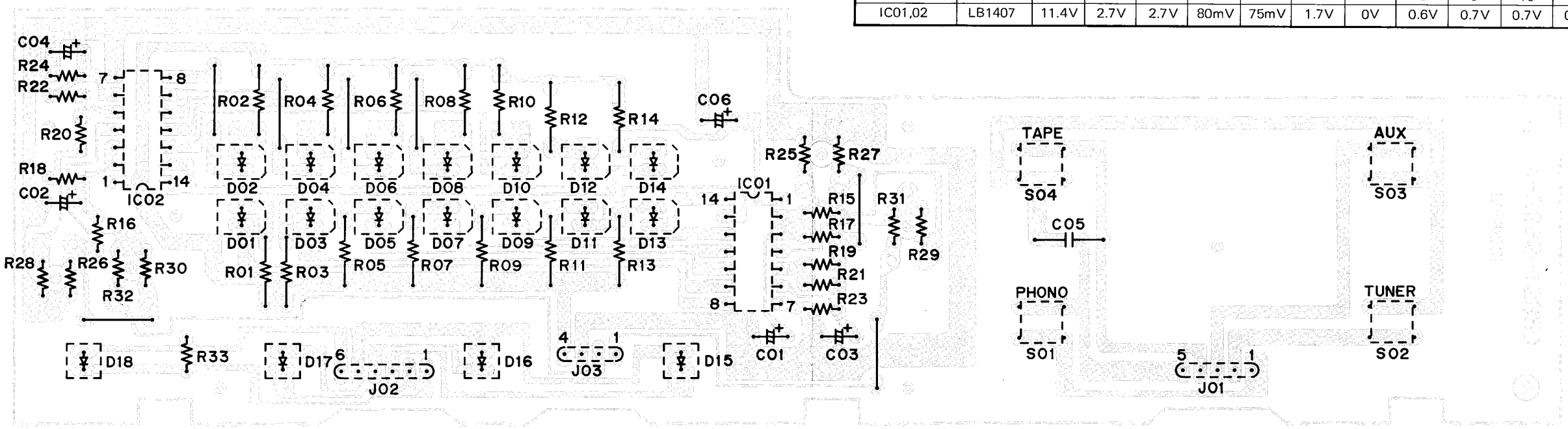
TRANSISTOR DC VOLTAGES				
SYMBOL No.	DEVICE	B	C	E
Q01,02	2SC536	−1.3V	17.3V	−1.9V
Q05	2SD400	20.8V	23.5V	20.2V
Q06	2SB544	−20.7V	−23.4V	−20.1V
Q07	2SC536	2.0V	1.4V	1.4V
Q08	2SC536	1.4V	1.4V	0.7V

IC PIN NUMBERS DC VOLTAGES																				
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC01	LA6458D	−9mV	5mV	5mV	−15.4V	5mV	5mV	−9mV	15.6V	—	—	—	—	—	—	—	—	—	—	—	—
IC02	LC7815H	10.8V	0V	27mV	0V	—	0V	11.9V	11.8V	0V	−7mV	−7mV	−9mV	—	−2mV	−2mV	—	—	—	0V	−11.9V
		21	22	23	24	25	26	27	28												
		—	11.9V	−11.6V	—	75mV	−11.6V	105mV	11.9V	11.9V	−1mV	−2mV	−11.6V	−11.6V	11.9V	—	—	—	—	—	—
IC03	LC4066	−2mV	−1mV	−1mV	−1mV	11.9V	11.9V	−11.9V	−1mV	−1mV	−1mV	−2mV	−11.6V	−11.6V	−1mV	—	—	—	—	—	—
IC04	LA6458D	4mV	4mV	4mV	−16V	5mV	5mV	−4mV	16.2V	—	—	—	—	—	—	—	—	—	—	—	—
IC05	STK4191	−40mV	−22mV	0V	−11.2V	−130mV	—	—	—	−40.7V	0.8V	40.7V	—	−130mV	−40.7V	−130mV	—	−22mV	−40mV	—	—

L.E.D. LEVEL METER & FUNCTION SW. P.C.BOARD

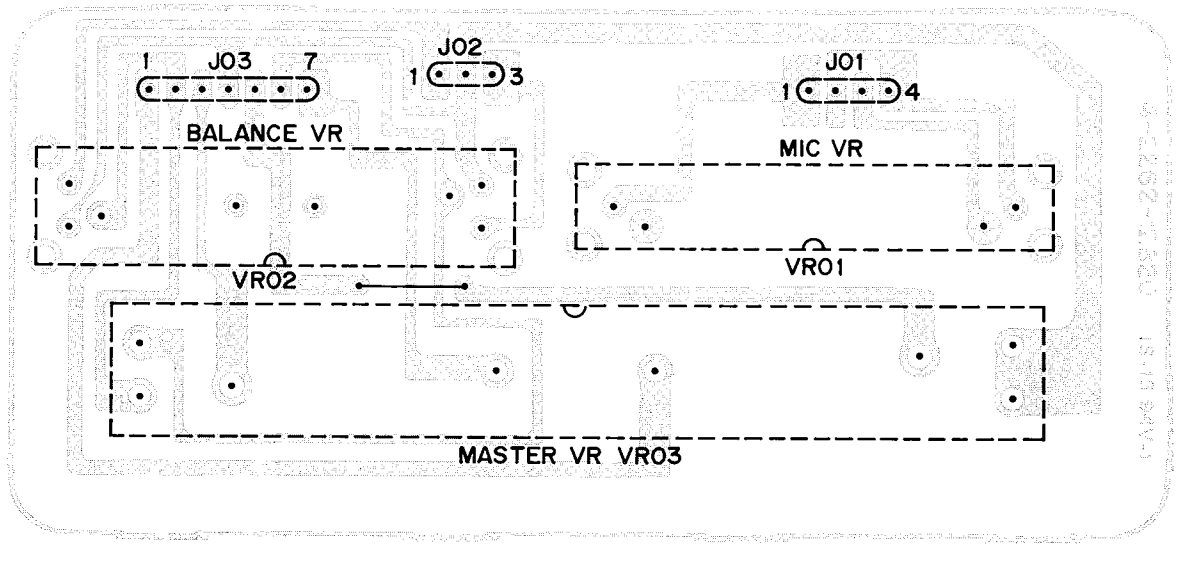
(BOTTOM VIEW)

IC PIN NUMBERS DC VOLTAGES															
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14
IC01,02	LB1407	11.4V	2.7V	2.7V	80mV	75mV	1.7V	0V	0.6V	0.7V	0.7V	0.7V	0.8V	10.4V	9.9V



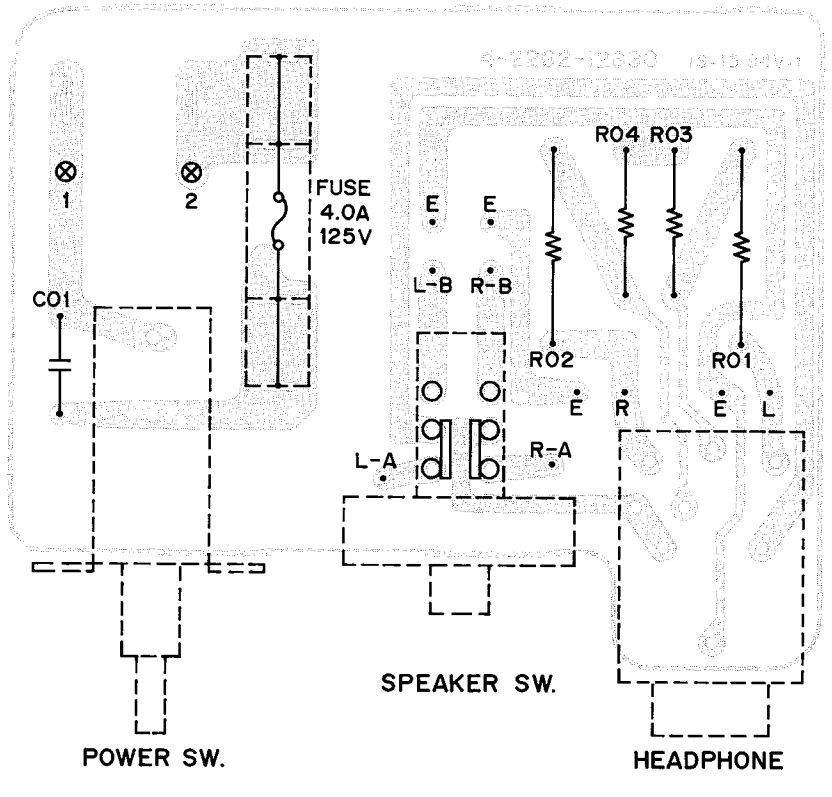
VOLUME P.C.BOARD

(BOTTOM VIEW)



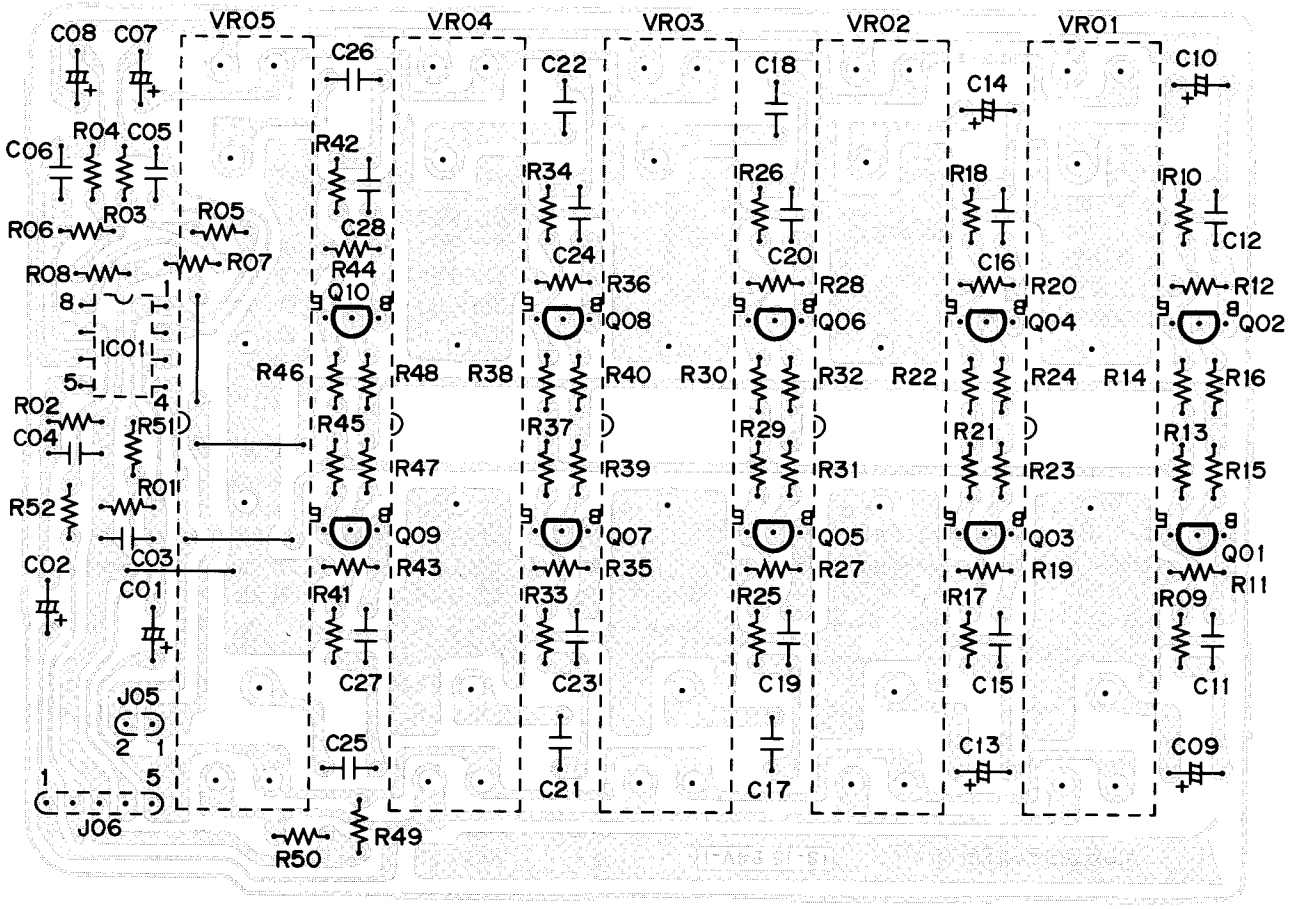
POWER SWITCH P.C.BOARD

(BOTTOM VIEW)



GRAPHIC EQUALIZER P.C.BOARD

(BOTTOM VIEW)



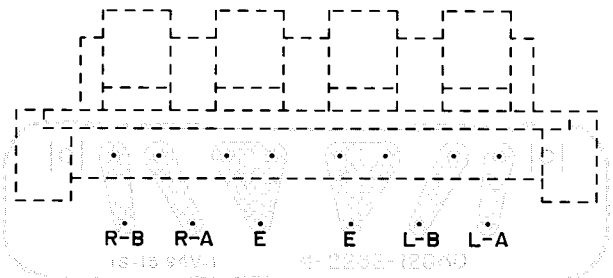
IC PIN NUMBERS DC VOLTAGES									
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8
IC01	LA6458D	50mV	3mV	3mV	−17.1V	3mV	3mV	50mV	17.3V

TRANSISTOR DC VOLTAGES				
SYMBOL No.	DEVICE	B	C	E
Q01,02	2SC1570	−0.4V	17V	−1.0V
Q03,04	2SC1570	−0.4V	17V	−1.0V
Q05,06	2SC1570	−133mV	17V	−0.7V
Q07,08	2SC1570	−78mV	17.2V	−0.7V
Q09,10	2SC1570	−84mV	17V	−0.7V

SPEAKER TERMINAL P.C.BOARD

(BOTTOM VIEW)

SPEAKER TERMINAL



PARTS LIST

MAIN P.C.B. Assy
131 0 4001 11440

Ref. No.	Parts Number	Description
	4 2322 00240	Relay
	4 2342 00230	Fuse 4.0 A (SP Protect)
	4 2352 01020	Pin Jack 6P
	4 2352 01220	Pin Jack 4P
	4 2352 01680	Jack 4P (Mic)
	4 2359 23000	Fuse Holder
L01,02	4 2532 00180	RF Filter
S01	4 2312 05700	Switch Push 2Key
JP01	4 2362 00780	Plug 5P
JP02	4 2362 00850	Plug 6P
JP03	4 2362 00840	Plug 4P
	CAPACITORS	
C03,04	C1HCYK101APA	Ceramic 100 pF 50V ±10%
C05,06	C1ERY-475APA	Eelctrolytic 4.7 μF 25V
C07,08	C1HCYK101APA	Ceramic 100 pF 50V ±10%
C11,12	C1ARY-476APA	Electrolytic 47 μF 10V
C13,14	C1HFYK472APA	Mylar 0.0047 μF 50V ±10%
C15,16	C1HFYK183APA	Mylar 0.018 μF 50V ±10%
C17,18	C1ERY-475APA	Electrolytic 4.7 μF 25V
C27,28	C1ERY-106APA	Electrolytic 10 μF 25V
33,34		
43,44		
C45,46	C1HRY-105APA	Electrolytic 1 μF 50V
C49,50	C1HCYK101APA	Ceramic 100 pF 50V ±10%
C51,52	C1HFYK273APA	Mylar 0.027 μF 50V ±10%
C57,58	C1HRY-105APA	Electrolytic 1 μF 50V
C61,62	C1ERY-475APA	Electrolytic 4.7 μF 25V
C63,64	C1HFYK273APA	Mylar 0.027 μF 50V ±10%
C67,68	C1HCYK471APA	Ceramic 470 pF 50V ±10%
C69,70	C1HRY-105APA	Electrolytic 1 μF 50V
C71,72	C1ARY-107APA	Electrolytic 100 μF 10V
C73,74	C1HRY-476APA	Electrolytic 47 μF 50V
C75,76	C1HRY-106APA	Electrolytic 10 μF 50V
C77,78	C1HRE-107A	Electrolytic 100 μF 50V
C79,80	C1HFRM104A	Mylar 0.1 μF 50V ±20%
C82	C1HYYZ103APA	Ceramic 0.01 μF 50V +80,–20%
C83,85	C1HRY-105APA	Electrolytic 1 μF 50V
C86	C1HCYK151APA	Ceramic 150 pF 50V ±10%
C87	C1ERY-226APA	Electrolytic 22 μF 25V
C88,89	C1HRY-105APA	Electrolytic 1 μF 50V
90,91		
92,93		
94		
C97	C1HRY-474APA	Electrolytic 0.47 μF 50V
C98,99	C1HRY-106APA	Electrolytic 10 μF 50V
C100	C1HRY-105APA	Electrolytic 1 μF 50V
C101,102	4 2232 00430	Ceramic 0.01 μFx2 250V
C103,104	C1HRK-688A	Electrolytic 6800 μF 50V
C105,106	C1VRE-227A	Electrolytic 220 μF 35V
C107,108	C1ERY-226APA	Electrolytic 22 μF 25V
C111,112	C1ERE-477A	Electrolytic 470 μF 25V
C113,114	C1ERY-476APA	Electrolytic 47 μF 25V
C115,116	C1CRY-476APA	Electrolytic 47 μF 16V
C117,118	C1CRY-107APA	Electrolytic 100 μF 16V
C119,120	4 2232 00430	Ceramic 0.01 μFx2 250V
C121	C1ERE-108A	Electrolytic 1000 μF 25V
C122	C1VRY-106APA	Electrolytic 10 μF 35V

Ref. No.	Parts Number	Description
	CAPACITORS	
C123	C1CRY-336APA	Electrolytic 33 μF 16V
C124	C1ERY-107APA	Electrolytic 100 μF 25V
C125	C1HRY-105APA	Electrolytic 1 μF 50V
	SEMICONDUCTORS	
D01,02	202 5 3210 12011	Zener Diode, GZA12X
D03,04	202 5 3210 20013	Zener Diode, GZA20Z
D05	202 5 2470 13540	Diode, DS135D
D06	205 5 9040 44210	Diode, DS-442
D07	202 5 2470 13540	Diode, DS135D
D08,09	205 5 9040 44210	Diode, DS-442
10,11		
12,13		
D14	202 5 3210 16011	Zener Diode, GZA16 X, Y, Z
D15	205 5 9040 44210	Diode, DS-442
D16	202 5 2470 13540	Diode, DS135D
D18,19	202 5 1400 00120	Diode, GMA-01-4-BT
DB01	202 5 2720 04015	Diode, DBA40C-K15
DB02	202 5 4620 01010	Diode, DBA10C
IC01	206 5 2726 45810	IC, LA6458DS (Phono Amp)
IC02	206 5 8897 81520	IC, LC7815H (Function Switch)
IC03	206 5 8144 06610	IC, LC4066BH (Tape Switch)
IC04	206 5 2726 45810	IC, LA6458DS (Mic Amp)
IC05	205 5 0044 19110	Power IC, STK4191
Q01,02	203 5 5000 53660	TR 2SC536 F, G, H
Q03,04	203 5 4921 01260	TR 2SD1012 F, G, H
Q05	203 5 6850 40040	TR 2SD400 D, E
Q06	203 5 6860 54440	TR 2SB544 D, E
Q07,08	203 5 5000 53660	TR 2SC536 F, G
	RESISTORS	
R01,02	R2CDZJ102APB	Carbon 1k 1/6W ±5%
R03,04	R2CDZJ104APB	Carbon 100k 1/6W ±5%
05,06		
R07,08	R2CDZJ331APB	Carbon 330 1/6W ±5%
R09,10	R2CDZJ153APB	Carbon 15k 1/6W ±5%
R11,12	R2CDZJ224APB	Carbon 220k 1/6W ±5%
R13,14	R2CDZJ102APB	Carbon 1k 1/6W ±5%
R15,16	R2CDZJ104APB	Carbon 100k 1/6W ±5%
R17,18	R2CDZJ102APB	Carbon 1k 1/6W ±5%
R19,20	R2CDZJ474APB	Carbon 470k 1/6W ±5%
R21,22	R2CDZJ102APB	Carbon 1k 1/6W ±5%
R23,24	R2CDZJ474APB	Carbon 470k 1/6W ±5%
R25,26	R2CDZJ102APB	Carbon 1k 1/6W ±5%
27,28		
R29,30	R2CDZJ474APB	Carbon 470k 1/6W ±5%
31,32		
R35,36	R2CDZJ123APB	Carbon 12k 1/6W ±5%
R37,38	R2CDZJ102APB	Carbon 1k 1/6W ±5%
R39,40	R2CDZJ474APB	Carbon 470k 1/6W ±5%
R41,42	R2CDZJ153APB	Carbon 15k 1/6W ±5%
R43,44	R2CDZJ104APB	Carbon 100k 1/6W ±5%
R45,46	R2CDZJ103APB	Carbon 10k 1/6W ±5%
R49,50	R2CDZJ105APB	Carbon 1M 1/6W ±5%
R51,52	R2CDZJ102APB	Carbon 1k 1/6W ±5%
R53,54	R2CDZJ333APB	Carbon 33k 1/6W ±5%
R55,56	R2CDZJ391APB	Carbon 390 1/6W ±5%

PARTS LIST (Continued)

Ref. No.	Parts Number	Description
	RESISTORS	
R57,58	R2CDZJ123APB	Carbon 12k 1/6W ±5%
R59,60	R2EDZJ222APA	Carbon 2.2k 1/4W ±5%
R61,62	R2HXBJ222A	Oxide Metal Film 2.2k 1/2W ±5%
R63	R2CDZJ101APB	Carbon 100 1/6W ±5%
R64	R2EZPK101A	Fuse 100 1/4W ±10%
R65,66	R2HXBJ100A	Oxide Metal Film 10 1/2W ±5%
R67,68		
R69	R2HXBJ332A	Oxide Metal Film 3.3k 1/2W ±5%
R70	R2CDZJ221APB	Carbon 220 1/6W ±5%
R71	R2CDZJ472APB	Carbon 4.7k 1/6W ±5%
R72	R2CDZJ104APB	Carbon 100k 1/6W ±5%
R73	R2CDZJ182APB	Carbon 1.8k 1/6W ±5%
R74	R2CDZJ154APB	Carbon 150k 1/6W ±5%
R75	R2CDZJ102APB	Carbon 1k 1/6W ±5%
R76,77	R2CDZJ104APB	Carbon 100k 1/6W ±5%
R78		
R79,80	R2CDZJ103APB	Carbon 10k 1/6W ±5%
R81,82	R2CDZJ153APB	Carbon 15k 1/6W ±5%
R83,84	R2CDZJ103APB	Carbon 10k 1/6W ±5%
R85,86	R2CDZJ331APB	Carbon 330 1/6W ±5%
R89,90	R2CDZJ104APB	Carbon 100k 1/6W ±5%
R91	R2CDZJ105APB	Carbon 1M 1/6W ±5%
R92	R2EDZJ103APA	Carbon 10k 1/4W ±5%
R93,94	R2HXBJ222APB	Oxide Metal Film 2.2k 1/2W ±5%
R101,102	R3DXBJ271A	Oxide Metal Film 270 2W ±5%
R103,104	R2CDZJ471APB	Carbon 470 1/6W ±5%
R105,106		
R107,108	R2CDZJ181APB	Carbon 180 1/6W ±5%
R109,110	R2CDZJ102APB	Carbon 1k 1/6W ±5%
R111,112	R2HXBJ221A	Oxide Metal Film 220 1/2W ±5%
R113,114	R2CDZJ122APB	Carbon 1.2k 1/6W ±5%
R115	R2CDZJ102APB	Carbon 1k 1/6W ±5%
R116	R2CDZJ334APB	Carbon 330k 1/6W ±5%
R117	R3AXBJ100A	Oxide Metal Film 10 1W ±5%
R118,119	R3AXBJ122A	Oxide Metal Film 1.2k 1W ±5%
R120	R2HZPKR47A	Fuse 0.47 1/2W ±10%
R121,122	R2EDPJ124A	Carbon 120k 1/4W ±5%

GRAPHIC EQ P.C.B. Assy
131 0 4001 11450

Ref. No.	Parts Number	Description
VR01	4 2222 02890	VR 250k-Wx2 (50 Hz)
VR02	4 2222 02890	VR 250k-Wx2 (250 Hz)
VR03	4 2222 02890	VR 250k-Wx2 (1 kHz)
VR04	4 2222 02890	VR 250k-Wx2 (4.5 kHz)
VR05	4 2222 02890	VR 250k-Wx2 (15 kHz)
	CAPACITORS	
C01,02	C1ERY-475APA	Electrolytic 4.7 μF 25V
C03,04	C1HCYK101APA	Ceramic 100 pF 50V ±10%
C05,06	C1HCYK470APA	Ceramic 47 pF 50V ±10%
C07,08	C1CRY-476APA	Electrolytic 47 μF 16V
C09,10	C1HRY-335APA	Electrolytic 3.3 μF 50V
C11,12	C1HFYK183APA	Mylar 0.018 μF 50V ±10%
C13,14	C1HRY-334APA	Electrolytic 0.33 μF 50V
C15,16	C1HFYK822APA	Mylar 0.0082 μF 50V ±10%

Ref. No.	Parts Number	Description
	CAPACITORS	
C17,18	C1HFRJ823ML	Mylar 0.082 μF 50V ±5%
C19,20	C1HFYK472APA	Mylar 0.0047 μF 50V ±10%
C21,22	C1HFYK223APA	Mylar 0.022 μF 50V ±10%
C23,24	C1HFYK122APA	Mylar 0.0012 μF 50V ±10%
C25,26	C1HFYK472APA	Mylar 0.0047 μF 50V ±10%
C27,28	C1HYYK681APA	Ceramic 680 pF 50V ±10%
	SEMICONDUCTORS	
IC01	206 5 2726 45810	IC, LA6458DS
Q01,02	203 5 5251 57060	TR 2SC1570 F, G, H
Q03,04		
Q05,06		
Q07,08		
Q09,10		
	RESISTORS	
R01,02	R2CDZJ104APB	Carbon 100k 1/6W ±5%
R03,04	R2CDZJ392APB	Carbon 3.9k 1/6W ±5%
R05,06	R2CDZJ103APB	Carbon 10k 1/6W ±5%
R07,08	R2CDZJ102APB	Carbon 1k 1/6W ±5%
R09,10	R2CDZJ152APB	Carbon 1.5k 1/6W ±5%
R11,12	R2CDZJ124APB	Carbon 120k 1/6W ±5%
R13,14	R2CDZJ153APB	Carbon 15k 1/6W ±5%
R15,16	R2CDZJ391APB	Carbon 390 1/6W ±5%
R17,18	R2CDZJ152APB	Carbon 1.5k 1/6W ±5%
R19,20	R2CDZJ104APB	Carbon 100k 1/6W ±5%
R21,22	R2CDZJ153APB	Carbon 15k 1/6W ±5%
R23,24	R2CDZJ391APB	Carbon 390 1/6W ±5%
R25,26	R2CDZJ152APB	Carbon 1.5k 1/6W ±5%
R27,28	R2CDZJ393APB	Carbon 39k 1/6W ±5%
R29,30	R2CDZJ153APB	Carbon 15k 1/6W ±5%
R31,32	R2CDZJ391APB	Carbon 390 1/6W ±5%
R33,34	R2CDZJ152APB	Carbon 1.5k 1/6W ±5%
R35,36	R2CDZJ333APB	Carbon 33k 1/6W ±5%
R37,38	R2CDZJ153APB	Carbon 15k 1/6W ±5%
R39,40	R2CDZJ391APB	Carbon 390 1/6W ±5%
R41,42	R2CDZJ152APA	Carbon 1.5k 1/6W ±5%
R43,44	R2CDZJ223APB	Carbon 22k 1/6W ±5%
R45,46	R2CDZJ153APB	Carbon 15k 1/6W ±5%
R47,48	R2CDZJ391APB	Carbon 390 1/6W ±5%
R49,50	R2CDZJ473APB	Carbon 47k 1/6W ±5%
R51,52	R2CDZJ102APB	Carbon 1k 1/6W ±5%

VOLUME P.C.B. Assy
131 0 4001 11460

Ref. No.	Parts Number	Description
VR01	4 2222 02880	VR 50k-Ax1
VR02	4 2222 02870	VR 500k-MN
VR03	4 2222 02900	VR 200k-Ax2

PARTS LIST (Continued)

POWER SW. P.C.B. Assy
131 0 4001 11470

Ref. No.	Parts Number	Description
	4 2312 03320	Push Switch 1Key
	4 2312 05360	Switch Push Power
	4 2349 20731	Fuse 4.0 A
	4 2352 01170	Jack 7P
	4 2359 23000	Fuse Holder
	CAPACITOR	
C01	C2HYDP103A	Ceramic 0.01 μF 500V +100,–0%
	RESISTORS	
R01,02	R3AXBJ391A	Oxide Metal Film 390 1W ±5%
R03,04	R2HXBJ121A	Oxide Metal Film 120 1/2W ±5%

SPEAKER TERMINAL P.C.B. Assy
131 0 4001 11480

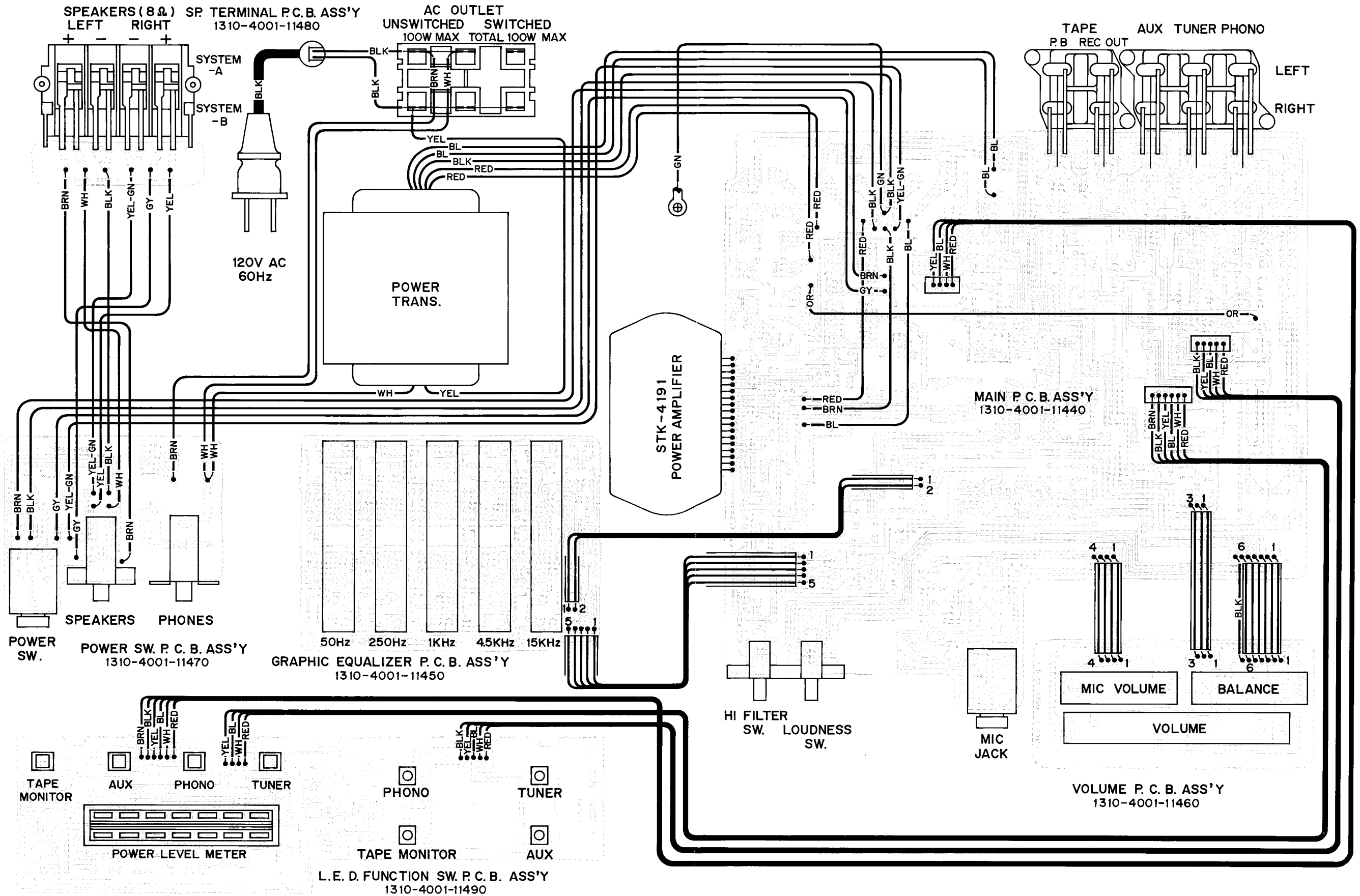
Ref. No.	Parts Number	Description
	4 2372 01160	Speaker 8P Terminal

L.E.D., FUNCTION SW. P.C.B. Assy
131 0 4001 11490

Ref. No.	Parts Number	Description
	131 2 4208 41300	Spacer (L.E.D.)
	131 2 6113 48100	Shelter
S01	4 2312 05300	Keyboard Switch 6mm (Phono)
S02	4 2312 05300	Keyboard Switch 6mm (Tuner)
S03	4 2312 05300	Keyboard Switch 6mm (Aux)
S04	4 2312 05300	Keyboard Switch 6mm (Tape)
	CAPACITORS	
C01,02	C1HRE-105A	Electrolytic 1.0 μF 50V
C03,04	C1ERE-475A	Electrolytic 4.7 μF 25V
C05	C1ECZN103XPA	Ceramic 10000 pF 25V ±30%
C06	C1HRE-105A	Electrolytic 1.0 μF 50V
	SEMICONDUCTORS	
D01,02 03,04 05,06 07,08 09,10 11,12 13,14	DYY-SLB-72GG	L.E.D., SLB-72GG (Green)
D15	4 2029 72100	L.E.D., GL-9NG54 (Green, Tuner)
D16	4 2029 72100	L.E.D., GL-9NG54 (Green, Phono)
D17	4 2029 72100	L.E.D., GL-9NG54 (Green, Aux)
D18	4 2029 72100	L.E.D., GL-9NG54 (Green, Tape)
IC01,02	206 5 2171 40710	IC, LB1407

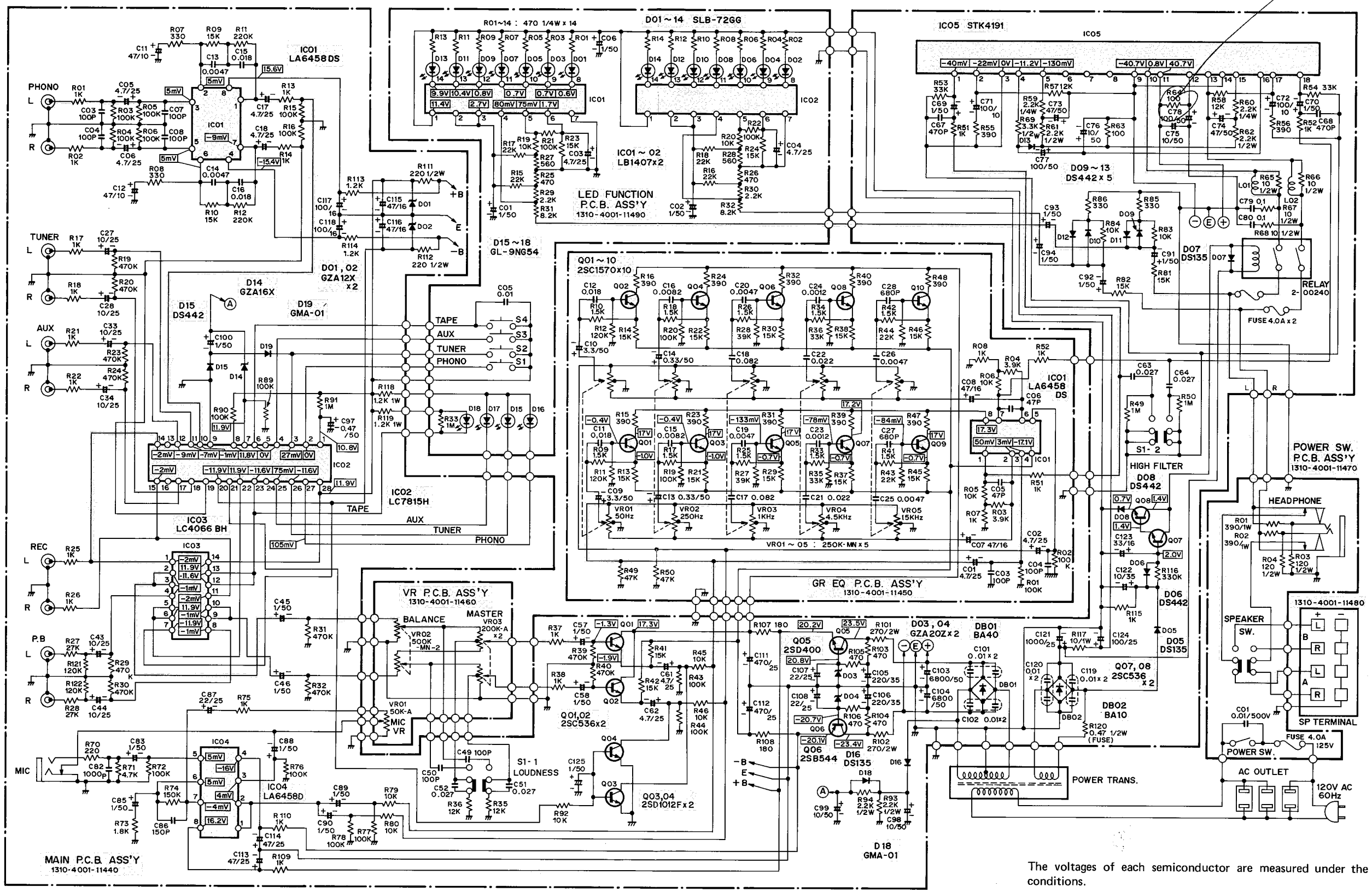
Ref. No.	Parts Number	Description			
	RESISTORS				
R01,02 03,04 05,06 07,08 09,10 11,12 13,14	R2EDZJ471APA	Carbon	470	1/4W	±5%
R15,16 17,18	R2CDZJ223APB	Carbon	22k	1/6W	±5%
R19,20	R2CDZJ103APB	Carbon	10k	1/6W	±5%
R21,22	R2CDZJ104APB	Carbon	100k	1/6W	±5%
R23,24	R2CDZJ153APB	Carbon	15k	1/6W	±5%
R25,26	R2CDZJ471APB	Carbon	470	1/6W	±5%
R27,28	R2CDZJ561APB	Carbon	560	1/6W	±5%
R29,30	R2CDZJ222APB	Carbon	2.2k	1/6W	±5%
R31,32	R2CDZJ822APB	Carbon	8.2k	1/6W	±5%
R33	R2CDZJ105APB	Carbon	1M	1/6W	±5%

POINT TO POINT WIRING DIAGRAM



SCHEMATIC DIAGRAM

all = but one
= open



NOTES:

1. All resistors values are indicated in "ohm" (K=10^3, M=10^6).
2. All capacitors values are indicated in "μF" (P=10^{-12}).
3. All voltages indicated on the schematics are measured under the following conditions.
   a. Use a V.T.V.M.
   b. All voltages ±10% with respect to chassis ground
   c. No signals at input terminals
   d. AC input at 120 volts 60 Hz
4. This is a basic schematic diagram.

Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

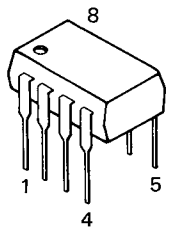
The voltages of each semiconductor are measured under the following conditions.

FUNCTION SW	TUNER
TAPE MONITOR SW	TAPE P/B
EQ CONTROL VOLUME	CENTER
BALANCE CONTROL	CENTER
OUTPUT	6.05 W + 6.05 W (6.96 V) when the 1 kHz sine-wave input is applied from the TAPE P/B terminal with the 8-ohm load resistance connected to the SPEAKER terminals.

SEMICONDUCTOR LEAD IDENTIFICATION

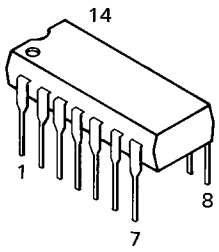
INTEGRATED CIRCUITS

PHONO/MIC AMP IC
GRAPHIC EQ AMP IC



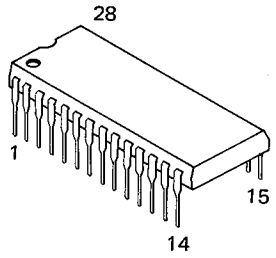
- LA6458D

LEVEL METER IC
TAPE SW IC
(Quad Bilateral SW)



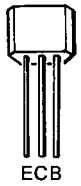
- LC4066B
- LB1407

FUNCTION SW IC
(Input Expander)

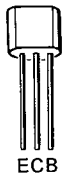


- LA7815H

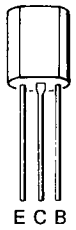
DIODES



- 2SD1012

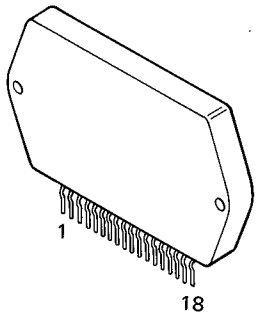


- 2SC536
- 2SC1570



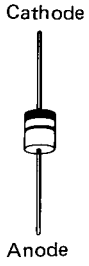
- 2SD400
- 2SB544

POWER AMPLIFIER IC

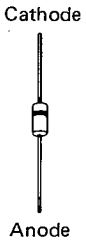


- STK4191

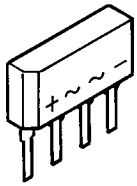
TRANSISTORS



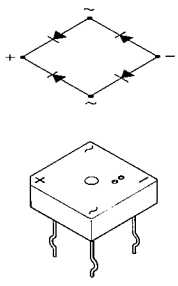
- DS-135D



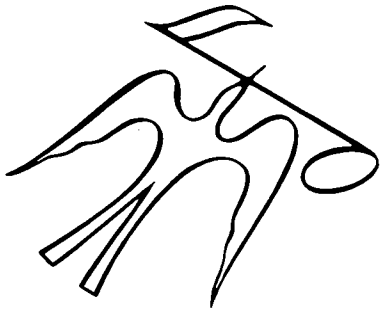
- DS-442
- GMA-01
- GZA12X
- GZA20Z



- DBA10C



- DBA40C



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